

Application No.: 10/775,372
Title: NAIL CLIPPERS
Attorney Docket No: 303.002

Examiner: Carolyn T. Blake
Group Art Unit: 3724

In the Specification:

A substitute specification is enclosed herewith. The substitute specification includes no new matter.

FIELD OF THE INVENTION

This invention relates to nail clippers.

BACKGROUND OF THE INVENTION

Nail clippers are known and used in the art. Nail clippers are used to trim fingernails and toenails of humans and other animals. Nail clippers as most commonly known and used in the art have an upper blade and a lower blade, which are substantially identical in architecture. The upper blade and lower blade are displaced towards each other, with the nail to be cut positioned between the blades. The blades are displaced towards each other until contact is made with the nail, and displacement is continued until the nail is divided by the blades, and the blades contact each other.

In nail clippers known and used in the prior art, the clippers do not provide protection from the cutting blades for skin that is in close proximity to the nail to be cut. Further, in prior art nail clippers, there is no provision for enhancing cutting performance where ingrown nails, and particularly toenails, are involved.

SUMMARY OF THE PRESENT INVENTION

The present invention is nail clippers which assist in preventing injury to the skin and tissue which surrounds the fingernails and toenails to be cut. Further, the invention facilitates cutting ingrown nails.

The nail clippers are characterized by a lower tray having side dams which extend upwardly from either side of the lower tray. A nail to be cut is positioned between the lower tray and an upper-blade. The upper-blade is displaced toward the lower tray, and within the side dams, until the upper-blade contacts the lower tray, passing through the nail to cut the nail. A front portion of the lower tray extends outwardly and beyond the upper-blade when the upper-blade is closed against the lower tray.

DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view of the nail clippers of the present invention.

Figure 2 is a perspective view of an additional embodiment of the nail clippers of the present invention.

Figure 3A is an isolation of the nail clippers of the present invention, emphasizing, *inter alia*, the lower tray and the upper-blade. The upper-blade and lower tray are separated, or open in this view, whereas they are together, or closed, in **Figures 1 and 2**.

Figure 3B is an isolation of the nail clippers of the present invention, with the upper-blade and lower tray held together, or closed, by a latch.

Figure 4 is a partially sectioned side elevation of another embodiment of the nail clippers of the present invention.

Figure 5 shows the nail clippers of **Figure 4**, with the upper-blade partially displaced toward the lower tray.

Figure 6 shows the invention of **Figures 4** and **5**, with the upper-blade fully displaced to the lower tray.

Figure 7 shows the nail clippers of the present invention as shown in **Figure 6**, with the lower tray being partially sectioned.

Figure 8 is a side elevation of the nail clippers of the present invention, with the upper-blade in the position shown in **Figure 6** and **Figure 7**.

Figure 9 is a plan view of the nail clippers of the embodiment of **Figures 4-8**.

Figure 10 is a perspective view of an additional embodiment of the nail clippers of the present invention.

Figure 11 is a side elevation of the nail clippers of **Figure 10**, with the jaws fully closed.

Figure 12 is a side elevation of the nail clippers of **Figure 10**, with the jaws in an intermediate position.

Figure 13 is a side elevation of the nail clippers of **Figure 10**, with the jaws fully open.

Figure 14 is a front elevation of the nail clippers of **Figure 10**, demonstrating a replaceable blade as a phantom.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Turning now to the drawing figures, an embodiment of the present invention is shown in **Figure 1**. The nail clippers comprise an upper handle **1** and a lower handle **2**. A grip **3** may be provided for the upper handle, and a grip **4** may be provided for the lower handle. An upper blade **5** communicates with the upper handle. A lower tray **8** communicates with the lower handle.

The lower tray has a front portion which extends beyond the upper blade when the upper blade is displaced to contact the lower tray. The upper blade is sharpened on a lower edge **9**, which contacts the lower tray **8**. Side dams **6** extend from each side of the lower tray. The upper blade is positioned fully within each side dam and above the lower tray. A groove or slot **7** may be formed in the lower tray to receive the upper blade.

Each side dam extends outwardly and beyond the tray as shown in the drawing figures. Each of the side dams extends outwardly and beyond the upper blade, when the blade is closed against the lower jaw, at an angle of 30° to 60° from a centerline drawn longitudinally, or along the length of, the nail clippers, and are preferably at an

angle of 45° from a centerline drawn longitudinally, or along the length of, the nail clippers

The front of the upper-blade is generally perpendicular to the lower tray, so that the sharpened lower edge of the upper-blade is generally perpendicular as the upper blade meets the lower tray, and/or as the upper-blade meets the groove or slot that is formed in the lower tray.

The handles of the upper-blade and the lower tray blade, are in a pivotal relationship to each other, as provided by pivot point 10. One side 11 of the upper blade is adjacent to the side dam.

In the embodiment shown in **Figure 2**, spring biasing is provided by means of spring 12 which is attached to the upper handle and lower handle at points 13 and 13'.

A latch may be provided, as shown in the embodiment of **Figure 2**. Latch 14 has a groove 15 therein in which pin or screw 16 travels. As latch 16 is advanced forwardly, it strikes the upper jaw at point 18, to close and latch the jaw. To use the device, the latch is moved rearwardly toward point 17, which releases the jaw. **Figure 3A**. For ease of manipulation, the edge of the latch may be scalloped and/or curved as shown. The screw may be used to hold the latch in place as desired. **Figure 3B** shows an alternative embodiment of the latch, with the latch mounted within a slot. The latch traverses the slot to lock and unlock the jaw, and limit travel of the jaw as desired.

In use, the lower tray is inserted underneath the nail to be cut. The front portion of the tray engages the quick of the nail, and aids in alignment. One of the side dams,

depending on whether the right edge or the left edge of the nail has skin or other tissue which is to be protected, is used to protect the skin or other tissue. The use of the side dam allows the nail to rest within the side dam, while the tissue is outside the dam.

The front edge of the lower tray is preferred to be relatively thin, having a dimension of .015 mm to .040 mm from the blade to the front edge, so that it may be easily inserted underneath the nail.

The nail clippers cut the nail by the nail being inserted between the upper blade and the lower tray. The upper blade is disposed toward the lower tray by compression of the handles, and travels toward the lower tray and through the nail until the nail is cut. Since the front of the lower tray extends beyond the blade, and the blade is recessed within the tray, and travels within the side dams, the blade cuts the nail only, and does not cut skin or other surrounding tissue. The tray as formed, with the side dams, allows the nail to be placed within the tray, while skin and other tissue are excluded. Since the blade operates only within the tray and is not outside of the tray, or "even" with the tray, upon the nail being properly positioned, only the nail is cut by the clippers, and surrounding skin is shielded by the lower tray and the side dams.

The embodiment of **Figures 4** through **9** show a different handle configuration. However, the primary elements of the device are the same as those shown in **Figures 1** through **3**.

As shown in **Figure 4**, this embodiment provides an upper leaf **20** and a lower leaf **21** which join each other. A lower tray **32** is provided, which has side dams **22** and

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23. An upper handle **24** is provided which allows displacement of leaf **20** toward leaf **21**, in a conventional manner. Handle **24** has a frontal portion **25** and **25'**, and a cam **26**. A void **27** permits a pivot point **28** for the handle **24** and leaf **20**. The handle and the upper leaf travel along a length of guide **29**. Upper-blade **30** extends from leaf **20** generally perpendicularly and toward the lower tray **32**, with the upper-blade engaging groove or slot **31** as shown in **Figures 6 and 7**.